

**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ichio YUDASAKA, Tatsuya SHIMODA, Sadao KANBE and Wakao MIYAZAWA

Application No.: New Rule 1.53(b) Divisional of U.S.S.N. 09/325,567

Filed: July 10, 2001

Docket No.: 040090.02

For: THIN FILM DEVICE PROVIDED WITH COATING FILM, LIQUID CRYSTAL  
PANEL AND ELECTRONIC DEVICE, AND METHOD FOR MAKING THE THIN  
FILM DEVICE

**PRELIMINARY AMENDMENT**

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

**IN THE CLAIMS:**

Please cancel claims 1-59 without prejudice to or disclaimer of the subject matter contained therein.

Please add new claims 60-110 as follows:

--60. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

- 61. The process of claim 60, further comprising drying the deposited material to remove said solvent.--
- 62. The process of claim 60 wherein said organic material is a luminescent polymer.--
- 63. The process of claim 60 wherein said material includes polyvinylcarbazol film.--
- 64. The process of claim 60 wherein said solvent is chloroform.--
- 65. The process of claim 60 wherein said material includes light emitting dyes.--
- 66. The process of claim 65 wherein said light emitting dyes include coumarin and nile red.--
- 67. The process of claim 66 wherein said coumarin is coumarin 6.--
- 68. The process of claim 66 wherein said coumarin is coumarin 47.--
- 69. The process of claim 66 wherein said coumarin is coumarin 6 and coumarin 47.--
- 70. The process of claim 60 wherein said organic material is a mixture of polymers and other organic molecules.--
- 71. A process for making organic light emitting diodes comprising the steps of:  
depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and  
evaporating the solvent, said organic material remaining on the substrate.--
- 72. The process of claim 71 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--
- 73. The process of claim 72 further including the step of metallizing said ink-jet printed substrates.--

--74. The process of claim 73 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--75. The process of claim 74 wherein said top metal contacts are deposited through a shadow mask.--

--76. The process of claim 71 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--77. The process of claim 74 wherein said top metal contacts are deposited in a pattern.--

--78. The process of claim 76 wherein said bottom metal contacts are deposited in a pattern.--

--79. The process of claim 71 further wherein said organic material includes light emitting dyes.--

--80. The process of claim 79 further including the step of depositing top contacts on said organic material by ink jet printing.--

--81. The process of claim 80 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

--82. A process of forming thin film field effect transistors comprising the steps of:  
forming a gate electrode on a substrate;  
forming a gate insulator over said gate electrode;  
forming a polymer semiconducting layer on said insulator by ink-jet printing;  
and

forming source and drain contacts on said semiconducting layer.--

--83. The process of claim 82 wherein said gate insulator is formed by ink-jet printing, and the semiconducting layer by other techniques.--

- 84. The process of claim 82 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--
- 85. The process of claim 83 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--
- 86. The process of claim 82 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 87. The process of claim 83 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 88. The process of claim 84 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 89. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:
- depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and
- evaporating the solvent, whereby said organic material remains on the substrate.--
- 90. The process of claim 89, further comprising drying the deposited material to remove said solvent.--
- 91. The process of claim 89 wherein said organic material is semiconducting.--
- 92. The process of claim 89 wherein said organic material is a luminescent polymer.--
- 93. The process of claim 89 wherein said solvent is chloroform.--
- 94. The process of claim 89 wherein said material includes light emitting dyes.--
- 95. The process of claim 94 wherein said light emitting dyes include coumarin and nile red.--

--96. The process of claim 95 wherein said coumarin is coumarin 6.--

--97. The process of claim 95 wherein said coumarin is coumarin 47.--

--98. The process of claim 95 wherein said coumarin is coumarin 6 and coumarin 47.--

--99. The process of claim 89 wherein said organic material is a mixture of polymers and other organic molecules.--

--100. A process for making organic light emitting diodes comprising the steps of:  
depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--101. The process of claim 100 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--102. The process of claim 101 further including the step of metallizing said ink-jet printed substrates.--

--103. The process of claim 102 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--104. The process of claim 103 wherein said top metal contacts are deposited through a shadow mask.--

--105. The process of claim 100 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--106. The process of claim 103 wherein said top metal contacts are deposited in a pattern.--

--107. The process of claim 105 wherein said bottom metal contacts are deposited in a pattern.--

--108. The process of claim 100 further wherein said organic material includes light emitting dyes.--

--109. The process of claim 108 further including the step of depositing top contacts on said organic material by ink jet printing.--

--110. The process of claim 109 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

REMARKS

Claims 60-110 are pending. By this Amendment, claims 1-59 are canceled, and claims 60-110 are added.

Prompt and favorable examination on the merits is respectfully requested.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Eric D. Morehouse  
Registration No. 38,565

JAO:EDM/gam

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**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

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